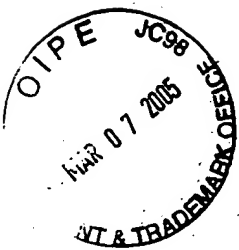


EVIDENCE APPENDIX

1. Declaration of Dr. George T. Ligler





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION NUMBER 08/487,526

DECLARATION OF DR. GEORGE T. LIGLER

I, George T. Ligler, declare as follows:

I. INTRODUCTION

1. This declaration is submitted to address several technical and fact issues that have arisen in the prosecution within the United States Patent and Trademark Office (USPTO) of patent application 08/487,526.

2. I have been asked to consider the following topics:

- (1) Whether or not the specifications of U.S. patent application Ser. No. 06/317,510 filed November 3, 1981 ("the 1981 specification") and U.S. patent application Ser. No. 07/096,096 filed September 11, 1987 ("the 1987 specification") each include a written description of the subject matter claimed in the set of amended claims for patent application 08/487,526 attached as Tab A to this Declaration ("the amended claims");
- (2) Several issues raised by the Examiner in Sections I through VI of the July 30, 2002 Office Action in this matter ("the July 2002 Office Action"), specifically:
 - (a) several aspects of the definition of the term "programming" as used in the 1981 and 1987 specifications, and the extent to which the term "programming" bears on the issue of whether or not the amended claims are adequately supported by both specifications;
 - (b) the extent to which any differences in the signaling method and terminology described in the 1981 and 1987 specifications would bear on the issue of whether or not the amended claims are adequately supported by both specifications; and

- (c) the extent to which any differences in the description of the Wall Street Week example in the 1981 and 1987 specifications would bear on the issue of whether or not the amended claims are adequately supported by both specifications.

3. I understand that this Declaration is being submitted in conjunction with Applicant's Response to the July 2002 Office Action.

II. QUALIFICATIONS

4. As set forth in my resume (attached at Tab B), I am self-employed by GTL Associates as a consultant for clients in the fields of telecommunications, computer systems engineering, and product management. My work involves the design, specification, and consideration of computer and microprocessor-based systems, including use of those systems within a telecommunications context, with respect to both hardware and software.

5. I earned a Bachelor's degree in Mathematics (*summa cum laude*) from Furman University in 1971, and Master of Science (M.Sc.) and Doctorate (D.Phil.) degrees in Computer Science from Oxford University in 1973 and 1975, respectively. My studies at Oxford were supported by a Rhodes Scholarship.

6. I have more than twenty-five years of professional experience in the management of projects involving computer-based systems and in the fields of computer hardware, software, and systems design. Projects for which I have been responsible have ranged in size from the development of software products by small teams of programmers to the design and implementation, under a contract initially valued at \$282M, of a nationwide communications network for the U.S. Treasury Department.

7. Of particular relevance to the present matter is my software and computer systems engineering experience between 1978 and 1987.

8. Beginning in 1978, I was responsible until April 1980 for a computer systems engineering branch within the Advanced Software Technology Department at Texas Instruments. The work of the branch focused on topics including the development of both software (including embedded operating systems) and hardware for application-specific microprocessor-based computer systems, including bus interface units used to support digital communications. I additionally chaired a corporate-wide task force that developed a high-level-language-oriented microprocessor architecture.

9. In 1980-1982 I was Deputy Manager of Great Valley Laboratories and subsequently Deputy General Manager and Director of Engineering of the Special Systems Division of the Burroughs Corporation. In the latter capacity, I was responsible for programs including research and development in distributed processing, the use of display technology, and telecommunications. My organization included approximately 450 engineering and support personnel.

10. From 1982 to 1984 I was President of the Aydin Controls Division of the Aydin Corporation. Aydin Controls designed, manufactured, and marketed high resolution color graphic display generators and color monitors for over 300 Original Equipment Manufacturers and end users.

11. From 1984 to 1987 I was a Division Vice President at Computer Sciences Corporation, and had program responsibility in several business areas involving telecommunications and computer systems technology.

12. I have authored or co-authored twenty technical publications in several fields, including articles relating to computer programming languages and their implementation, computer software development methodologies, and computer/computer system architecture. Tab C is a list of these publications, as well as information on indicative abstracts and standards group working papers which I have authored or co-authored.

13. I have taught graduate and undergraduate level courses at the University of Texas at San Antonio in computer science, given numerous invited lectures in several technology areas, served on doctoral dissertation committees, and served, *pro bono*, on advisory committees formed by the National Research Council and other bodies.

14. I have been engaged by the Hunton & Williams law firm as a consultant in connection with this matter. I have been compensated at my normal consulting rate, plus expenses. I will receive no other compensation for my work in this matter.

15. Attached at Tab D is a list of materials cited and/or reviewed in preparing this Declaration. In particular, I have reviewed Sections 201.11 and 2163 of the Manual of Patent Examining Procedures (MPEP) (8th Ed. 2001) in conjunction with 35 U.S.C. §§ 112 and 120 and I have applied the standards set forth in those documents to perform my analysis of the written description issue raised in (1) in Paragraph 2 above.

III. SUMMARY OF OPINIONS

16. I have formed the following opinions based principally upon (1) my direct experience between 1978 and 1987 summarized above; (2) trial testimony which I have read and about which I have previously opined concerning the level of ordinary skill prior to 1985 in the art of the 1981 and 1987 specifications; and (3) my review of the 1981 specification, the 1987 specification, the amended claims, MPEP materials cited above, and the July 2002 Office Action:

- A. A person of ordinary skill in the art of the 1981 and 1987 specifications in 1981 would be a skilled individual in the computer arts and in television and/or cable systems. This individual might be degreed or alternatively might have extended experience after either a high school education or a high school education plus a few years of college. A person of ordinary skill in the art of the 1981 and 1987 specifications in 1987 would have the same level of skill but would be more likely to have a college degree and

would also be aware of advances in the art that had occurred between 1981 and 1987.

- B. From the vantage point of such a person of ordinary skill in 1981, the claimed subject matter of the amended claims is sufficiently described in the 1981 specification. From the vantage point of such a person of ordinary skill in 1987, the same claimed subject matter of the amended claims is sufficiently described in the 1987 specification.
- C. Differences between the 1981 and 1987 specifications concerning the topics enumerated in Paragraph 2(2) above would not impact the ability of such persons of ordinary skill in the art to conclude that the subject matter claimed in the amended claims is sufficiently described in both specifications.

IV. BASES FOR OPINIONS

17. References herein to the 1981 specification are made with regard to the presentation of that specification in U.S. Patent 4,694,490.

A. Person of Ordinary Skill in the Art of the 1981 and 1987 Specifications

18. While the 1981 specification does not expressly list the fields involved therein, the commonality with the express recitations in the 1987 specification is clear (1987 specification at page 1, lines 10-17). The 1981 specification clearly discusses (following the 1987 specification's enumeration):

- (a) computer processing: e.g., at col. 4, l. 68 to col. 5, l. 7; col. 19, ll. 48-53.
- (b) computer communications: e.g., at col. 5, ll. 11-14; col. 19, ll. 35-41.
- (c) television: e.g., at col. 3, ll. 32-37.
- (d) radio: e.g., at col. 3, ll. 51-56.
- (e) other electronic communications: e.g., at col. 3, ll. 51-56.

- (f) automating the handling, recording, and retransmitting of television, radio, computer, and other electronically transmitted programming: at, e.g., col. 3, ll. 51-56; col. 10, ll. 14-23; col. 11, ll. 38-44.
- (g) regulating, metering, and monitoring the availability, use, and usage of such programming: at, e.g., col. 3, ll. 41-47; col. 3, l. 66 to col. 4, l. 4; col. 5, ll. 11-14.

19. As discussed in Section II above, I was directly involved in the research, development, and management of microcomputer-based systems including display and telecommunications technology in the period 1978-1987. My duties included supervision of many engineering and technical personnel in these fields. Additionally, I have reviewed trial testimony specifically regarding the level of experience of practitioners in the fields of the computer arts as they relate to the provision of information over cable television systems in this time frame such as John Kerklo, Charles Clupper, and Michael Axford (please see Tab E). I therefore conclude

Opinion A: A person of ordinary skill in the art of the 1981 and 1987 specifications in 1981 would be a skilled individual in the computer arts and in television and/or cable systems. This individual might be degreed or alternatively might have extended experience after either a high school education or a high school education plus a few years of college. A person of ordinary skill in the art of the 1981 and 1987 specifications in 1987 would have the same level of skill but would be more likely to have a college degree and would also be aware of advances in the art that had occurred between 1981 and 1987.

B. The 1981 and 1987 Specifications and the Written Description Requirement with Regard to the Amended Claims

20. I have carefully reviewed the amended claims in view of both the 1981 specification as understood by a person of ordinary skill in the art in 1981 and the 1987 specification as understood by a person of ordinary skill in the art in 1987. I will discuss at this point how both the 1981 and 1987 specifications so understood support the

claimed subject matter of independent amended claims 2, 20, 24, 26, 29, and 33. Tab F is a Supplemental Support Chart which provides the basis of support for amended claims other than independent amended claims 2, 20, 24, 26, 29, and 33. Although I have provided the bases for my opinion for claims other than amended claims 2, 20, 24, 26, 29, and 33 in chart form for purposes of brevity, I conducted the same detailed analysis for those claims as I have done for amended claims 2, 20, 24, 26, 29, and 33.

(1) Amended Claim 2

21. Amended claim 2 recites the following, with annotations providing exemplary support from the 1981 and 1987 specifications:

2. A method for outputting a multimedia presentation at a receiver station adapted to receive a plurality of signals, said method comprising the steps of:

receiving said plurality of signals, at least a portion of said plurality of signals being received from a source external to said receiver station, said plurality of signals including at least two media (1981 specification at, e.g., col. 19, ll. 5-8 and ll. 35-41; 1987 specification at, e.g., p. 20, ll. 20-29; and p. 449, ll. 13-20 and ll. 26-35);

storing information from a first of said at least two media (1981 specification at, e.g., col. 19, ll. 39-41; 1987 specification at, e.g., p. 449, ll. 13-35);

determining content of a second medium received in said plurality of signals (1981 specification at, e.g., col. 19, ll. 12-23; 1987 specification at, e.g., p. 435, l. 23 to p. 436, l. 1);

coordinating, at said receiver station under computer control, a presentation using said information with a presentation of said second medium based on said step of determining (microcomputer 205; 1981 specification at, e.g.,

col. 19, ll. 30-34; and col. 19, l. 54 to col. 20, l. 2; 1987 specification at, e.g., p. 12, ll. 3-9; p. 24, l. 22 to p. 25, l. 8; and p. 25, l. 33 to p. 26, l. 11); and

outputting said multimedia presentation to a user at said receiver station based on said step of coordinating such that said presentation using said information has a predetermined relationship to said content of said second medium (1981 specification at, e.g., col. 19, l. 67 to col. 20, l. 2; 1987 specification at, e.g., p. 26, ll. 4-11).

22. In both the 1981 and 1987 specifications, an exemplary "plurality of signals including at least two media" is a first medium containing stock quote information and a second medium being the Wall Street Week television program with embedded instruction and information signals (1981 specification at, e.g., col. 19, ll. 5-8 and ll. 35-41; 1987 specification at, e.g., p. 20, ll. 21-26; and p. 449, ll. 13-20 and ll. 26-35). Both of these media are expressly described as being received by the exemplary user's receiver station from one or more sources external to that receiver station (1981 specification at, e.g., col. 19, ll. 5-8 and ll. 35-41; 1987 specification at, e.g., p. 20, ll. 20-29; and p. 449, ll. 13-20 and ll. 26-35).

23. In both the 1981 and 1987 specifications, stock quote information pertinent to a user's stored stock portfolio is stored at the exemplary receiver station (1981 specification at, e.g., col. 19, ll. 39-41; 1987 specification at, e.g., p. 449, ll. 13-35). While the 1987 specification discloses that the exemplary portfolio information is stored on a floppy disk at the receiver station (1987 specification at, e.g., p. 21, ll. 5-14), this particular method of storing is not recited in amended claim 2.

24. In both the 1981 and 1987 specifications, a program identifier received in advance of the exemplary Wall Street Week broadcast is used to determine content of the

Wall Street Week television program (1981 specification at, e.g., col. 19, ll. 12-23; 1987 specification at, e.g., p. 435, l. 23 to p. 436, l. 1). As with the instruction signals discussed in Paragraphs 39 and 40 below, the 1987 specification describes a more detailed signaling protocol for the program identification signals than is described in the 1981 specification. However, none of these details are recited in amended claim 2.

25. In both the 1981 and 1987 specifications, the exemplary receiver station prepares, under control of at least exemplary microcomputer 205, a presentation using the stored stock quote information pertinent to the stored stock portfolio of a user of the receiver station. This presentation is a graphic overlay of the user's own stocks' performance to be shown in conjunction with a television-studio-generated graphic of performance of the Dow Jones Industrials (and, in the 1981 specification, of the NASDAQ index as well) within the Wall Street Week television program (1981 specification at, e.g., col. 19, l. 54 to col. 20, l. 2; 1987 specification at, e.g., p. 24, l. 22 to p. 25, l. 8). Both the 1981 and 1987 specifications disclose the preparation of the combined display as involving coordination in time (1981 specification at, e.g., col. 19, ll. 30-34; 1987 specification at, e.g., p. 12, ll. 3-9; and p. 25, l. 33 to p. 26, l. 11). The coordination is based upon the receipt of the Wall Street Week program identifier because receipt of that identifier enables the entire process of generation, coordination, and display of the overlay of the user's own stocks' performance.

26. Finally, both the 1981 and 1987 specifications disclose that, based upon the step of coordinating discussed in Paragraph 25 above, the exemplary overlay of the user's own stocks' performance and the studio-generated graphic of stock index performance received in a transmission of the Wall Street Week television program are simultaneously (a predetermined relationship based on time and content) displayed (1981

specification at, e.g., col. 19, l. 67 to col. 20, l. 2; 1987 specification at, e.g., p. 26, ll. 4-11).

27. The above evidence clearly indicates, in my opinion, that the claimed subject matter of amended claim 2 is disclosed in sufficient detail, in both the 1981 and 1987 specifications, that a person of ordinary skill in the relevant time frames would reasonably understand that the inventor possessed the subject matter of amended claim 2 at the time of the filing of those specifications.

(2) Amended Claim 33

28. Amended claim 33 recites the following, with annotations providing exemplary support from the 1981 and 1987 specifications:

33. A method of outputting a multimedia presentation at a receiver station, said method comprising the steps of:

receiving a first signal from a remote transmitter station (1981 specification at, e.g., col. 20, ll. 16-19; 1987 specification at, e.g., p. 470, ll. 9-17);

outputting said first signal at said receiver station (1981 specification at, e.g., col. 20, ll. 16-19; 1987 specification at, e.g., p. 470, ll. 9-17; and p. 471, ll. 6-13);

receiving a user response based on said step of outputting (1981 specification at, e.g., col. 20, ll. 19-28; 1987 specification at, e.g., p. 471, ll. 6-24);

comparing said user response to information corresponding to content of said first signal at said receiver station (1981 specification at, e.g., col. 20, ll. 28-38; 1987 specification at, e.g., p. 472, ll. 13-17);

tuning said receiver station to receive a second signal based on said step of comparing (1981 specification at, e.g., col. 20, ll. 32-37; 1987 specification at, e.g., p. 471, l. 8; and p. 477, ll. 8-13); and

outputting information included in said second signal (1981 specification at, e.g., col. 20, ll. 47-50; 1987 specification at, e.g., p. 474, ll. 2-35);

wherein said multimedia presentation comprises information included in said first signal and said information included in said second signal (1981 specification at, e.g., col. 20, ll. 16-19 and ll. 47-50; 1987 specification at, e.g., p. 470, ll. 9-17; p. 471, ll. 6-13; and p. 474, ll. 2-8).

29. In both the 1981 and 1987 specifications, a cooking television program with its embedded instruction and information signals is the exemplary first signal (1981 specification at, e.g., col. 20, ll. 16-19 ("The French Chef"); 1987 specification at, e.g., p. 470, ll. 9-17 ("Exotic Meals of India")). This first signal is received by the exemplary user's receiver station from a remote transmitter station (1981 specification at, e.g., Figure 6D; 1987 specification at, e.g., Figure 7F).

30. In both the 1981 and 1987 specifications, the cooking program is disclosed to be output at the receiver station (1981 specification at, e.g., col. 20, ll. 16-19; 1987 specification at, e.g., p. 470, ll. 9-17; and p. 471, ll. 6-13).

31. In both the 1981 and 1987 specifications, an exemplary user response of "567" may be received by the receiver station if the user is interested in obtaining a recipe for a particular dish (1981 specification at, e.g., col. 20, ll. 19-28; 1987 specification at, e.g., p. 471, ll. 6-24). This user response is disclosed as being based upon hearing an audio statement within the cooking program broadcast (1981 specification at, e.g., col. 20, ll. 19-24; 1987 specification at, e.g., p. 471, ll. 6-13).

32. In both the 1981 and 1987 specifications, the exemplary user response is (at least) inherently compared, upon receiving an instruction signal embedded within the broadcast of the cooking television program (see Paragraphs 39 and 40 below), against information (e.g., "567") corresponding to the audio statement made within the cooking program broadcast to determine whether the user wishes to obtain the recipe (1981 specification at, e.g., col. 20, ll. 28-38; 1987 specification at, e.g., p. 472, ll. 13-17).

33. In both the 1981 and 1987 specifications, if the comparison indicates that the user wishes to obtain the recipe, tuning at the exemplary receiver station is disclosed (this is an alternate embodiment within the 1987 specification) in order to receive a second signal which contains recipe information (1981 specification at, e.g., col. 20, ll. 32-37; 1987 specification at, e.g., p. 471, l. 8; p. 473, ll. 3-13; p. 474, ll. 8-35; and p. 477, ll. 8-13).

34. In both the 1981 and 1987 specifications, the recipe, if ordered, is output at the user receiver station (1981 specification at, e.g., col. 20, ll. 47-50; 1987 specification at, e.g., p. 474, ll. 2-8). The exemplary multimedia presentation in both specifications includes both the cooking television program and a printed recipe (1981 specification at, e.g., col. 20, ll. 16-19 and ll. 47-50; 1987 specification at, e.g., p. 470, ll. 9-17; p. 471, ll. 6-13; and p. 474, ll. 2-8).

35. The above evidence clearly indicates, in my opinion, that the claimed subject matter of amended claim 33 is disclosed in sufficient detail, in both the 1981 and 1987 specifications, that a person of ordinary skill in the relevant time frames would reasonably understand that the inventor possessed the subject matter of amended claim 33 at the time of the filing of those specifications.

(3) Amended Claims 20, 24, 26, and 29

36. Amended claim 20 has recitations similar in many respects to those of amended claim 2 (see Paragraphs 21 through 27 above), with the first medium of amended claim 20 exemplified by the Wall Street Week television program and its embedded instruction and information signals and the second medium of amended claim 20 being exemplified by stock quote information. Both the 1981 and 1987 specifications disclose that content of the stock quote information is identified (1981 specification at, e.g., col. 19, ll. 35-41; 1987 specification at, e.g., p. 449, ll. 13-35) and that processor instructions are executed in order to prepare the coordinated presentation of the overlay of the user's own stocks' performance and the studio-generated graphic discussed, for example, in Paragraphs 25 and 26 above (1981 specification at, e.g., col. 19, ll. 48-53; 1987 specification at, e.g., p. 24, l. 22 to p. 25, l. 6). Both the 1981 and 1987 specifications also disclose that generation of the overlay of the user's own stocks' performance is based on identifying content of the stock quote information (1981 specification at, e.g., col. 19, ll. 35-41 and ll. 48-53; and col. 19, ll. 67 to col. 20, l. 2; 1987 specification at, e.g., p. 24, l. 22 to p. 25, l. 8; and p. 449, ll. 13-35).

37. Amended claim 24 has recitations similar in many respects to those of amended claim 33 (see Paragraphs 28 through 35 above), with the exemplary television program being the cooking television program of Paragraph 29 above and the exemplary first and second output devices being a television and printer, respectively (1981 specification at, e.g., Figure 6D, elements 202 and 221; and col. 20, ll. 11-14, ll. 16-18, and ll. 47-50; 1987 specification at, e.g., Figure 7F, elements 202M and 221; and p. 469, ll. 3-9). The exemplary "information stored at said receiver station" is the user response of "567" discussed in Paragraph 31 above. The exemplary "second information corresponding to content of said television program" is as discussed in Paragraph 32 above. Both the 1981 and 1987 specifications disclose two exemplary media, providing the cooking television program with its embedded instruction and information signals and the recipe, which are received from different sources (e.g., different channels: see

Paragraph 33 above; 1981 specification at, e.g., col. 15, ll. 52-56; 1987 specification at, e.g., p. 317, ll. 2-6).

38. Amended claim 26 has recitations similar in many respects to those of amended claim 2 (see Paragraphs 21 through 27 above). The two media of amended claim 26 being received from different sources is exemplified by receiving stock quote information from either a remote data service or a digital information channel while receiving the Wall Street Week broadcast originating in a remote television studio through a multichannel cable television system (1981 specification at, e.g., col. 15, ll. 52-56; col. 19, ll. 5-8, ll. 37-39, and ll. 60-62; and Figure 6C; 1987 specification at, e.g., p. 20, ll. 21-29; p. 317, ll. 2-6; p. 449, ll. 26-35; and Figure 7C). Identifying content of the media is supported as discussed in Paragraphs 24 and 36 above. Both the 1981 and 1987 specifications disclose outputting the multimedia presentation based upon identifying content of the media (1981 specification at, e.g., col. 19, ll. 20-29, ll. 35-41 and ll. 48-53; and col. 19, ll. 67 to col. 20, l. 2; 1987 specification at, e.g., p. 24, l. 22 to p. 25, l. 8; p. 25, l. 23 to p. 26, l. 11; p. 435, l. 23 to p. 436, l. 1; and p. 449, ll. 13-35).

39. Amended claim 29 also has recitations similar in many respects to those of amended claim 2 (see Paragraphs 21 through 27 above), with a specific recitation of a control signal "that causes execution of processor instructions to create a series of discrete video images." In both the 1981 and 1987 specifications, this control signal is disclosed as being an exemplary instruction signal, a signal which is transmitted within, for example, the signals for a television program, and which instructs microcomputers at subscriber stations to perform particular operations (at least inherently using processor instructions) (1981 specification at, e.g., col. 10, ll. 14-61; and col. 19, ll. 42-44, ll. 48-53, and ll. 60-62; 1987 specification at, e.g., p. 12, ll. 18-25; p. 25, l. 33 to p. 26, l. 12; and p. 451, ll. 6-11). The detailed data signaling protocol for instruction signals presented in the 1987 specification and not presented in the 1981 specification is simply not recited in amended claim 29. The Wall Street Week television program is given as a specific

example of transmitted video in both specifications (1981 specification at, e.g., col. 19, ll. 5-9; 1987 specification at, e.g., p. 20, ll. 21-26). Moreover, both specifications expressly disclose examples of instruction signals (see Paragraph 40 below) broadcast by a remote transmitter which cause a microcomputer at a subscriber's receiver station to either generate or output the same exemplary locally generated portion of the Wall Street Week video presentation (i.e., an overlay of the user's own stocks' performance, see Paragraph 25 above).

40. The specific exemplary signals disclosed to cause the generation of the exemplary overlay are discussed in a much more detailed fashion in the 1987 specification than in the 1981 specification (see, e.g., the End of File Signal (EOFS) in the 1987 specification at Figure 2I; p. 24, ll. 16-21; p. 62, ll. 26-28; and p. 105, l. 9 to p. 106, l. 3; 1981 specification at, e.g., col. 19, ll. 45-53). However, none of these details are recited in amended claim 29. Similarly, the specific exemplary signals disclosed to cause the outputting of the overlay of the user's own stocks' performance onto the studio-generated graphic within the Wall Street Week television broadcast are more detailed in the 1987 specification than in the 1981 specification (see, e.g., the 1987 specification at p. 25, l. 34 to p. 26, l. 11; the 1981 specification at, e.g., col. 19, ll. 60-66). However, such signals for causing outputting are not recited in amended claim 29.

41. The above evidence clearly indicates, in my opinion, that the claimed subject matter of amended claims 20, 24, 26, and 29 is disclosed in sufficient detail, in both the 1981 and 1987 specifications, that a person of ordinary skill in the relevant time frames would reasonably understand that the inventor possessed the subject matter of amended claims 20, 24, 26, and 29 at the time of the filing of those specifications.

42. As mentioned above, Tab F is a Supplemental Support Chart which provides the basis of support for amended claims other than independent claims 2, 20, 24, 26, 29, and 33. On the basis of the discussion in Paragraphs 18-41 above and Tab F, I therefore conclude:

Opinion B: From the vantage point of such a person of ordinary skill in 1981, the claimed subject matter of the amended claims is sufficiently described in the 1981 specification. From the vantage point of such a person of ordinary skill in 1987, the same claimed subject matter of the amended claims is sufficiently described in the 1987 specification.

C. Impact of Differences between the 1981 and 1987 Specifications

43. The emphasis in Opinion B above on the word “claimed” when modifying the term “subject matter” is key to the analysis presented in Paragraphs 17-42, as there are clearly many differences between the 1981 and 1987 specifications, particularly (though not only) in the level of detail of presentation. In this context, I have been asked to consider several issues raised by the Examiner in Sections I through VI of the July 2002 Office Action and to determine any impact of those issues on the question of whether or not the amended claims are adequately supported by the 1981 and 1987 specifications.

(1) “Programming”

44. In the July 2002 Office Action, the Examiner states that a change was made to the definition of the word “programming” in the 1987 specification as compared to the 1981 specification (July 2002 Office Action, at, e.g., pp. 22-23). In developing his argument, however, the Examiner takes, as I understand the argument, an overly narrow interpretation of the 1981 specification’s definition of the term:

“everything that is transmitted over television or radio intended for communication of entertainment or to instruct or inform”
(1981 specification at Abstract).

45. In my opinion, the above definition of the term “programming” expressly includes the instruction and information signals referred to numerous times in the 1981 specification (and, as seen above, in the 1987 specification). Indeed, the specification passages cited by the Examiner on pp. 25-27 of the July 2002 Office Action confirm this view. For example, the repeated discussion in these passages of identifier signals, instruction signals, and information signals being “in” programming simply confirms the express definition provided in the Abstract of the 1981 specification, as does discussion of adding such signals to programming.

46. The 1987 specification’s definition of the term “programming” is as follows:

“everything that is transmitted electronically to entertain, instruct, or inform including television, radio, broadcast print, computer programming, as well as combined medium programming” (1987 specification at p. 11, ll. 6-10).

47. Given that the instruction and information signals disclosed in the 1981 and 1987 specifications are expressly in this definition as well, the issue raised by the Examiner of the definition of the term “programming” in the 1981 and 1987 specifications does not, in my view, bear on the issue of whether or not the amended claims are supported by both specifications. Moreover, the term “programming” is not used in the amended claims (see Tab A).

(2) Signaling Method and Terminology

48. In the July 2002 Office Action, the Examiner further asserts that several differences between the 1981 and 1987 specifications involving signaling methods and

terminology are pertinent to the claimed subject matter in the claims under examination. I will discuss several of these assertions with regard to the amended claims.

49. First, the Examiner maintains that “the ‘instruct signals’ of applicant’s 1987 specification comprised computer software/programming whereas the ‘instruct signals’ of applicant’s 1981 specification did not comprise computer software/programming” (July 2002 Office Action, p. 37). In my view, the accuracy or inaccuracy of this assertion does not bear on the issue of whether or not the amended claims are supported by both specifications. For example, as discussed in Paragraphs 39 and 40 above, both the 1981 and 1987 specifications disclose instruction signals that are not computer software/programming and that serve the claimed functions of amended claim 29. Other instruction signal recitations in the amended claims are similarly supported.

50. Second, the Examiner maintains that “the term ‘signal word’ represents but just one example of the more subtle inconsistencies that exist between the 1981 and the 1987 disclosures” (July 2002 Office Action, p. 38). As noted in the July 2002 Office Action (July 2002 Office Action, pp. 38-39), this term is given the identical express definition (including the relationship of a “signal word” to a “signal unit”) in both the 1981 and 1987 specifications. It is this express definition, and the clear (to a person of ordinary skill in the art in the relevant time frame) applicability of this definition to the transmission of signals in the Wall Street Week example in both the 1981 and 1987 specifications, which I have applied in the analysis of the amended claims, and I find the subject matter of the amended claims supported by both the 1981 and 1987 specifications using this definition (see, for example, the 1981 specification at, e.g., col. 2, l. 64 to col. 3, l. 12; and col. 7, ll. 36-39; 1987 specification at, e.g., p. 14, l. 22 to p. 15, l. 6; p. 30, ll. 7-9; p. 69, ll. 10-12; and p. 74, ll. 10-13). I further note that none of the amended claims recite either the term “signal word” or the organization of signal words into signal units such as an instruction signal.

51. Third, the Examiner maintains that the 1987 specification discloses a Signal Processing Apparatus and Methods (SPAM) environment in which “it was this SPAM packeting which carried an expanded range of ‘signal unit’-like information” (July 2002 Office Action at p. 41, italics in original). Again, whether or not this assertion has merit with regard to new matter (“expanded range”) being present in the 1987 specification, the signals claimed in the amended claims, as discussed in Paragraphs 24 and 39-40 above, are supported in both the 1981 and 1987 specifications.

52. Finally, the Examiner appears to assert that unlike the receiver station of the 1981 specification, the receiver station of the 1987 specification could be reprogrammed “on the fly (i.e., without a visit from a service technician being necessary)” (July 2002 Office Action, p. 48). As discussed in Paragraph 47 above, any differences between the 1981 and 1987 specifications in this regard do not bear on the issue of whether or not the amended claims are supported by both specifications. However, I observe that the Examiner, in making this statement, is overlooking the clear disclosure in the 1981 specification that describes reprogramming of a receiver station without a visit from a service technician being necessary (1981 specification at, e.g., col. 9, ll. 21-22; and col. 10, ll. 10-13).

53. In summary, while the disclosure of signaling protocols is much more detailed in the 1987 specification and that disclosure in a number of cases uses terminology not used in the 1981 specification, the details of the protocols are not recited in the amended claims and the differences in terminology do not bear on the issue of whether or not the amended claims are supported by both specifications.

(3) The Description of the Wall Street Week Example in the 1981 and 1987 Specifications

54. The Examiner asserts that there are inconsistencies between the 1981 and 1987 specifications with regard to the description of the Wall Street Week example of coordinating multimedia presentations in time. I have been asked to determine whether

any such inconsistencies bear on the issue of whether or not the amended claims are supported by both specifications.

55. One primary argument of the Examiner in this regard is that the method used to overlay graphic images in the Wall Street Week example involves downloading software in the 1987 specification but involves the “cuing” of the receiver station to execute preexisting software instructions in the 1981 specification (July 2002 Office Action, at, e.g., p. 45). As indicated in Paragraph 52 above, the 1981 specification expressly discloses an ability to reprogram the receiver station in question. In any event, however, none of the amended claims recites the downloading of software instructions and/or reprogramming of the microcomputer 205 of embodiments of the receiver station (see also Paragraph 47 above). I thus conclude that this argument of the Examiner does not bear on the issue of whether or not the amended claims are supported by both specifications.

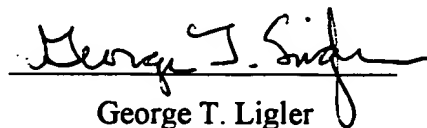
56. The second primary argument of the Examiner is that “all of the recitations that are directed to the signals/instructions/data that are conveyed as ancillary signaling within Radio and TV Programming transmissions, derive their Required Section 112 support from the SPAM signaling that was first introduced by applicant’s “1987” instant disclosure.” (July 2002 Office Action, p. 46). As discussed in, for example, Paragraphs 24 and 39-40 above, the 1981 and 1987 specifications both support the claimed signals, and the amended claims do not recite the details of the SPAM signaling method, those details indeed in many instances being first introduced in the 1987 specification.

57. I therefore conclude

Opinion C: Differences between the 1981 and 1987 specifications concerning the topics enumerated in Paragraph 2(2) above would not impact the ability of one of ordinary skill in the art to conclude that the subject matter claimed in the amended claims is sufficiently described in both specifications.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of patent application 08/487,526 or any patent that issues thereon.

Executed this 23rd day of January, 2003, at Potomac, Maryland.


George T. Ligler

Tab A

2. A method of outputting a multimedia presentation at a receiver station adapted to receive a plurality of signals, said method comprising the steps of:

receiving said plurality of signals, at least a portion of said plurality of signals being received from a source external to said receiver station, said plurality of signals including at least two media;

storing information from a first of said at least two media;

determining content of a second medium received in said plurality of signals;

coordinating, at said receiver station under computer control, a presentation using said information with a presentation of said second medium based on said step of determining; and

outputting said multimedia presentation to a user at said receiver station based on said step of coordinating such that said presentation using said information has a predetermined relationship to said content of said second medium.

3. The method of claim 2, wherein said information from a first of said at least two media is stored in said computer.

4. The method of claim 3, wherein said computer performs said step of determining.

5. The method of claim 2, wherein each of said plurality of signals is received from an external transmitter station.

6. The method of claim 5, wherein said external transmitter station is an intermediate transmitter station.

7. The method of claim 2, wherein said content of said second medium explains a significance of said presentation using said information.
8. The method of claim 7, wherein said content of said second medium explains said significance in audio.
9. The method of claim 8, wherein said determining step causes a tuner at said receiver station to communicate said audio to an audio output device.
10. The method of claim 9, wherein said second medium comprises television, including video and said audio.
11. The method of claim 2, wherein said plurality of signals includes a digital data channel.
12. The method of claim 11, wherein said receiver station receives said first of said at least two media in said digital data channel.
13. The method of claim 2, wherein said step of determining comprises processing an identifier.

14. The method of claim 13, wherein said identifier identifies said content of said second medium.

15. The method of claim 14, wherein said content of said second medium includes audio.

16. The method of claim 14, wherein said content of said second medium includes video.

17. The method of claim 2, further comprising the step of storing said second medium at said receiver station.

18. The method of claim 17, wherein said second medium comprises television including video and audio and wherein said first medium is received in a digital data channel of a multichannel cable transmission including said second medium.

20. A method of outputting a multimedia presentation at a receiver station adapted to process a plurality of signals, said plurality of signals including first and second media of said multimedia presentation, said method comprising the steps of:

receiving a first of said plurality of signals from a source external to said receiver station, said first of said plurality of signals including an identifier;

processing said first of said plurality of signals to provide said first medium of said multimedia presentation and said identifier;

identifying content of said first medium based on said identifier;

controlling said receiver station, based on said step of identifying, to enable a coordinated presentation, through execution of processor instructions, of said first medium and information based on said second medium, wherein, said information based on said second medium is generated based on identifying content of said second medium; and

outputting said multimedia presentation based on said step of controlling.

21. The method of claim 20, wherein said first medium comprises a television program including video and audio.

22. The method of claim 20, further including the step of receiving said second medium in a digital data channel.

23. The method of claim 20, wherein said first medium comprises a television program including video and audio and wherein said plurality of signals is included in a multichannel cable transmission and includes a digital data channel including said second medium.

24. A method of outputting a multimedia presentation at a receiver station, said method comprising the steps of:

receiving a first medium including a television program;

comparing first information stored at said receiver station to second information corresponding to content of said television program to determine whether to present a second

medium based on third information received from a source different from that of said first medium;

coordinating presentation, based on said determination, of said television program of said multimedia presentation with presentation of said second medium of said multimedia presentation; and

outputting said television program of said multimedia presentation at a first output device at said receiver station, and said second medium at a second output device at said receiver station.

25. The method of claim 24, wherein said second output device comprises a printer.

26. A method of outputting a multimedia presentation at a receiver station adapted to receive a plurality of media, said method comprising the steps of:

receiving, at said receiver station, at least two of said plurality of media from different sources, at least one of said different sources being a remote transmitter station;

processing said at least two of said plurality of media in order to output said multimedia presentation;

identifying content of a first and content of a second of said at least two of said plurality of media based on said step of processing; and

outputting said multimedia presentation based on said step of identifying, said multimedia presentation comprising a presentation of information included in said first of said at least two of said plurality of media and information based on said second of said at least two of said plurality of media.

27. The method of claim 26, said method further comprising the step of storing said information based on said second of said at least two of said plurality of media at said receiver station.

28. The method of claim 27, further comprising the step of storing said first of said at least two of said plurality of media at said receiver station.

29. A method of outputting a multimedia presentation at a receiver station having an output device, said method comprising the steps of:

processing a control signal at said receiver station that causes execution of processor instructions to create a series of discrete video images;

identifying content of a first medium, said first medium to be output in said multimedia presentation;

causing a video image of said series of discrete video images to be output subsequent to said step of identifying; and

combining said outputted video image into said multimedia presentation at said output device based on said step of causing to be output, said multimedia presentation comprising said first medium and said outputted video image of said series of discrete video images.

30. The method of claim 29, wherein said step of identifying comprises processing an identifier, said method further comprising the step of receiving said identifier from a remote transmitter station.

33. A method of outputting a multimedia presentation at a receiver station, said method comprising the steps of:

- receiving a first signal from a remote transmitter station;
- outputting said first signal at said receiver station;
- receiving a user response based on said step of outputting;
- comparing said user response to information corresponding to content of said first signal at said receiver station;
- tuning said receiver station to receive a second signal based on said step of comparing;

and

- outputting information included in said second signal;

wherein said multimedia presentation comprises information included in said first signal and said information included in said second signal.

34. The method of claim 33, further comprising the step of transmitting information from said receiver station based on said step of receiving said user response.

35. The method of claim 33, wherein said information included in said second signal is output to a printer.

36. The method of claim 34, wherein said transmitted information is transmitted by telephone.

37. A multimedia presentation apparatus comprising:
at least one receiver for receiving a plurality of signals from a source external to said multimedia presentation apparatus, said plurality of signals including at least two media;
a microcomputer that stores information from a first of said at least two media and coordinates a presentation using said information with a presentation of a received second medium of said at least two media based on determining content of said second medium; and
at least one output device operatively connected to said at least one receiver and said microcomputer for outputting a multimedia presentation to a user at said multimedia presentation apparatus based on said coordinating such that said presentation using said information has a predetermined relationship to said content of said second medium.

38. The apparatus of claim 37, wherein said microcomputer determines said content of said second medium by processing an identifier transmitted from said source external to said multimedia presentation apparatus, said multimedia presentation apparatus further comprising a detector operatively connected to said microcomputer for detecting said identifier.

39. The apparatus of claim 38, wherein said multimedia presentation apparatus receives a multichannel signal, said multimedia presentation apparatus further comprising a converter operatively connected to said at least one receiver for communicating a portion of said multichannel signal.

40. The apparatus of claim 39, further comprising a first controlled device operatively connected to said microcomputer for causing said converter to select said second medium.

41. The apparatus of claim 40, further comprising a storage device operatively connected to said converter for storing said second medium.

42. The apparatus of claim 41 further comprising a second controlled device operatively connected to said microcomputer for causing said storage device to store said second medium.

67. The apparatus of claim 37, wherein said second medium comprises a television program including video and audio.

68. The apparatus of claim 37, wherein said microcomputer receives said first medium in a digital data channel.

69. The apparatus of claim 37, wherein said second medium comprises a television program including video and audio and wherein said microcomputer receives said first medium in a digital data channel of a multichannel cable transmission including said second medium.

70. A multimedia presentation apparatus comprising:
a receiver for receiving a first of a plurality of signals from an external source, said first of said plurality of signals including an identifier, said plurality of signals including a first medium and a second medium of a multimedia presentation;

a microcomputer for identifying content of said first medium based on said identifier, and for executing processor instructions to enable a coordinated presentation of said first medium and information based on said second medium, wherein, said information based on said second medium is generated based on identifying content of said second medium; and

an output device for outputting said coordinated presentation of said first medium and information from said second medium.

71. The apparatus of claim 70, wherein said first medium comprises a television program including video and audio.

72. The apparatus of claim 70, wherein said microcomputer receives said second medium in a digital data channel.

73. The apparatus of claim 70, wherein said first medium comprises a television program including video and audio and wherein said plurality of signals is included in a multichannel cable transmission and includes a digital data channel including said second medium.

74. A multimedia presentation apparatus comprising:
a receiver for receiving a first medium including a television program;
a microcomputer for storing first information, comparing said first information to second information corresponding to content of said television program to determine whether to present a second medium based on third information received from a different source than that of said

first medium, and coordinating presentation, based on said determination, of said television program with presentation of said second medium;

a first output device for outputting said television program; and

a second output device for outputting said second medium.

75. The apparatus of claim 74, wherein said second output device comprises a printer.

76. A multimedia presentation apparatus comprising:

a first receiver for receiving a first medium;

a second receiver for receiving a second medium;

a microcomputer for identifying content of said first medium and identifying content of said second medium and controlling, based on said identifying content, a multimedia presentation comprising information included in said first medium and information based on said second medium; and

an output device for outputting said multimedia presentation.

77. The apparatus of claim 76, wherein said microcomputer controls storage of said information based on said second medium.

78. The apparatus of claim 77, wherein said microcomputer controls storage of said first medium.

79. The apparatus of claim 76, wherein said first medium comprises a television program including video and audio.

80. The apparatus of claim 76, wherein said second receiver receives said second medium in a digital data channel.

81. The apparatus of claim 76, wherein said first medium comprises a television program including video and audio and wherein a multichannel cable transmission includes said first medium and a digital data channel including said second medium.

82. The method of claim 26, wherein said first of said at least two of said plurality of media comprises a television program including video and audio.

83. The method of claim 26, wherein said second of said at least two of said plurality of media is received in a digital data channel.

84. The method of claim 26, wherein said first of said at least two of said plurality of media comprises a television program including video and audio and wherein said plurality of media is included in a multichannel cable transmission including a digital data channel including said second of said at least two of said plurality of media.

85. A multimedia presentation apparatus comprising:

a microcomputer for creating a series of discrete video images by executing processor instructions based on processing a control signal, identifying content of a first medium, and then causing a video image of said series of discrete video images to be output;

an output device at which said video image is combined into said multimedia presentation, said multimedia presentation comprising said first medium and said video image.

86. The apparatus of claim 85, wherein said microcomputer processes an identifier from a remote transmitter station to identify content of said first medium.

87. The apparatus of claim 85, wherein said first medium comprises a television program including video and audio.

88. The apparatus of claim 85, wherein said microcomputer processes data received in a second medium to create said series of discrete video images.

89. The apparatus of claim 88, wherein said second medium is received in a digital data channel.

90. The apparatus of claim 88, wherein said first medium comprises a television program including video and audio and wherein a multichannel cable transmission includes said first medium and a digital data channel including said second medium.

91. The method of claim 29, wherein said first medium comprises a television program including video and audio.

92. The method claim 29, wherein said execution of processor instructions to create a series of discrete video images includes processing data received in a second medium.

93. The method of claim 92, wherein said second medium is received in a digital data channel.

94. The method of claim 92, wherein said first medium comprises a television program including video and audio and wherein a multichannel cable transmission includes said first medium and a digital data channel including said second medium.

95. A multimedia presentation apparatus comprising:

- a first receiver for receiving a first signal from a remote transmitter station;
- a second receiver for receiving a second signal;
- a microcomputer for receiving a user response based on outputting said first signal, comparing said user response to information corresponding to content of said first signal, and based on said comparison tuning said second receiver to receive said second signal;

wherein said apparatus presents a multimedia presentation comprising information included in said first signal output at a first output device and information included in said second signal output at a second output device.

96. The apparatus of claim 95, further comprising a transmitter for transmitting information from said microcomputer based on said user response.

97. The apparatus of claim 96, wherein said transmitter transmits by telephone connection.

98. The apparatus of claim 95, wherein said second output device comprises a printer.

99. The apparatus of claim 95, wherein said first signal includes a television program including video and audio.

100. The apparatus of claim 99, wherein said first signal and said second signal are received in a multichannel cable transmission.

101. The method of claim 33, wherein said first signal includes a television program including video and audio.

102. The method of claim 101, wherein said first signal and said second signal are received in a multichannel cable transmission.

103. The method of claim 24, wherein said television program and said third information are included in first and second channels, respectively, of a multichannel cable transmission.

104. The apparatus of claim 74, wherein said television program and said third information are included in first and second channels, respectively, of a multichannel cable transmission.

Tab B

Resume

George T. Ligler

GTL ASSOCIATES
12400 BEALL MOUNTAIN ROAD
POTOMAC, MARYLAND 20854
(301) 983-4388

Education

Oxford University, Oxford, England
M.Sc., Computer Science, 1973
D. Phil., Computer Science, 1975
(Rhodes Scholarship)

Furman University, Greenville, South Carolina
B.S., Mathematics, 1971
Summa Cum Laude

Experience

December 1988 - Present: GTL ASSOCIATES
Potomac, Maryland

Proprietor

Established consulting firm in telecommunications, computer system engineering, and information management. Systems integration/engineering and product management services provided to thirty-two clients in the United States and Europe. Assignments have included telecommunications network design, product and service definition and management, consulting on major program management and the systems integration process, applications systems engineering, business process improvement, competitive analysis, red teaming of major proposals, representation of clients in international fora, support of patent licensing discussions, participation in litigation as an expert witness, and new business venture planning.

January 2003

Experience

December 1984 - December 1988: COMPUTER SCIENCES CORPORATION, Falls Church, Virginia

Vice President, Systems Group, November 1987 - December 1988

Assignments on major program acquisition efforts within Systems Group, CSC's \$750M/year Government business. Areas of involvement included pre-award project team preparation, proposal review and assistance, subcontractor selection and management, competitive analysis, and business acquisition process review.

Vice President & Executive Director, Consolidated Data Network, Systems Division, October 1986 - November 1987

Program Office responsibility for a \$282 million, 8-year effort to provide, operate, and maintain packet-switched data network for the U.S. Treasury Department, with AT&T and BBN as major subcontractors. Put in place a network design and implementation infrastructure that achieved peak cutover rates of over 20 network locations per working day, enabling customer to transition to new expanded enforcement data system without major delay. Reduced CSC cost per site cutover by over 20%. Established material planning methodology (MRPII) to improve inventory management. Laid the groundwork for resolution of several important contractual issues. Recruited and developed successor program manager.

Vice President, Communications and Controls Products, Systems Division, December 1984 - October 1986

Responsible for a \$12M/year business area engaged in the supply of Energy Management and Control Systems (EMCS) and communications subsystems for urban rapid transit systems. Expanded EMCS business from Tri-Service applications to commercial arena and made that business profitable. Responsible for the development of selected communication security products as value-added options for CSC's systems integration thrust.

Experience

March 1982 - December 1984. AYDIN CORPORATION.
Fort Washington, Pennsylvania

President, Aydin Controls Division, March 1982 -
December 1984.

Vice President, Aydin Corporation, February 1983 -
December 1984.

General management responsibility for a 375-person, fully-integrated Division with annual sales of \$27M of computer graphics equipment. Product lines in color raster scan display generators, high resolution monitors, and turnkey CAD/CAM systems. Market areas included process control, utilities, defense, and petrochemical resource exploration. Division growth 1981-1984 of approximately 45%, outperforming most graphics terminal competitors. Significant operational improvements boosted margins for investment in sales, marketing, and product development.

April 1980 - March 1982. BURROUGHS CORPORATION.
Paoli, Pennsylvania.

Deputy Manager, Great Valley Labs, April 1980 -
January 1981.

Deputy General Manager and Director of Engineering,
Special Systems Division, Federal and Special Systems
Group, January 1981 to March 1982

Chief technical executive for Special Systems Division precursor. Later responsible for 400 research and engineering personnel engaged in the development of primarily command/control/communications and secure systems. Research component of organization executing projects in diverse areas of computer science and engineering, including distributed processing, local area networks, software tools/engineering, VLSIC design, and machine intelligence. Remaining activities matrixed into Division programs for customers including NATO, NSA, Navy, Army, and FAA. Assist with general management of a \$50M marketing, engineering, and manufacturing operation.

Experience

September 1976 - April 1980. TEXAS INSTRUMENTS,
Dallas, Texas.

Project Manager, Research Manager.

Developed software products (e.g., compilers, programming tools) which became sources of TI revenue. Built an applied research and development activity of 15-20 persons with diverse program elements in computer systems and software engineering. Chaired a 25-member corporate-wide technical working group on advanced computer architectures; member of corporate computer science thrust team.

September 1975 - September 1976. UNIVERSITY OF TEXAS AT SAN ANTONIO, San Antonio, Texas.

Assistant Professor of Computer Science

Taught graduate/undergraduate courses in programming languages and analysis of algorithms. Research and publication in software engineering and programming language design. Chairman, Division Faculty Recruiting Committee.

Professional Activities

Author or co-author of twenty technical papers in the areas of software engineering, telecommunications, computer and computer systems architecture, navigation and information systems for aviation, and computer graphics.

Member, Association of American Rhodes Scholars, ACM, ION.
Senior Member, IEEE.

Director, American Trust for Wolfson College, Oxford.

Numerous invited lectures, panels, and program committee memberships.

Adjunct faculty member (two dissertation committees), Union Institute, 1989-1993.

Professional Activities

Recipient of Furman University's highest alumni award, 1979.

Member of National Research Council's Committee on Review of the Information Systems Modernization of the Internal Revenue Service, 1990-1995.

Member of Technical Review Committee for Georgia Institute of Technology's Futurenet, which formed the backbone for telecommunications within the 1996 Olympic Village, 1994-1996.

Member, Program Management Committee, RTCA (Aviation Standards Federal Advisory Committee), August 2000 to present.

Member of National Research Council's Panel on Research on Future Census Methods, December 2000 to present.

Tab C

PUBLICATION LIST
GEORGE T. LIGLER (January 2003)

1. "A Mathematical Approach to Language Design", *Proceedings of the 2nd ACM SIGPLAN/SIGACT Symposium on Principles of Programming Languages*, Palo Alto, January 1975, 41-53.
2. Proof Rules, Mathematical Semantics, and Programming Language Design, Doctoral Thesis, Oxford University, 184 pp., 1975.
3. "Surface Properties of Programming Language Constructs", *Proceedings of the International Symposium on Proving and Improving Programs*, Arc-et-Senans, France, July 1975, IRIA, 299-323.
4. "On the Use of Mathematically Testable Criteria in the Design of Programming Languages for Reliable Software", 1976 ACM Computer Science Conference, Anaheim, February 1976.
5. "The Assignment Axiom and Programming Language Design", *Proceedings of the 1976 ACM National Conference*, ACM, New York, 2-6.
6. "TI Pascal Language Reference Manual" (with G.J. Hansen), Texas Instruments Technical Report, October 1977.
7. "The TI Pascal System: Run-Time Support" (with E.E. Ferguson), *Proceedings of the Eleventh Hawaii International Conference On System Sciences, Volume III: Selected Papers in Mini and Micro Computer Systems*, Honolulu, January 1978, 69-84.
8. "A Software Development Methodology: Issues, Techniques, and Tools" (with R.R. Bate), *Proceedings of the Eleventh Hawaii International Conference on System Sciences*, Honolulu, January 1978, 40-44.
9. "An Approach to Software Testing" (with R.R. Bate), *Proceedings of the Second IEEE International Computer Software and Applications Conference*, Chicago, November 1978, 476-480.
10. "The TI Microprocessor Pascal System" (with L.D. Kroeker, W. Merritt, and L. Spry), MIDCON 78, Dallas, December 1978.

11. "Concurrency Constructs for Programming Languages: Issues and Prognosis" (with D.J. Frailey and G.J. Hansen), 1979 Louisiana Microcomputer Conference.
12. "High Order Language Architectures for DoD Tactical Systems", *Proceedings of the 1979 National Aerospace and Electronics Conference, Volume II*, IEEE, New York, 691-694.
13. "Display Technology for Industrial Process Control" (with D.J. Winward), *Professional Program Session Record 19, MIDCON 83*, Chicago, September 1983.
14. "Toward an ATN Framework for Automated Reporting of Meteorological Data by Aircraft" (with A. Snively, D.J. Trombley, and R.D. Londot), *Proceedings of the Third Annual International Aeronautical Telecommunications Symposium on Data Link Integration*, McLean, Virginia, May 1991, 51-54.
15. "The Meteorological Data Collection and Reporting System: Status and Future Directions" (with D.L. Taylor and R.D. Londot), *Proceedings of the Fourth International Conference on Aviation Weather Systems*, Paris, France, June 1991, 144-146.
16. "The Meteorological Data Collection and Reporting System (MDCRS): System Overview and Benefits" (with R. Petersen, C. Dey, R. Martin, and R.D. Londot), *Proceedings of the National Weather Service Aviation Workshop*, Kansas City, December 1991, 251-255.
17. "Development of Minimum Aviation System Performance Standards for DGNSS Instruments Approach Systems (DIAS)" (with K.D. McDonald), *Proceedings of the 49th Annual Meeting of the Institute of Navigation*, Cambridge, Mass., June 21-23, 1993, 119-120.
18. "The RTCA Category II/III DGNSS Instrument Approach System Standards Development" (with K.D. McDonald), *Proceedings of the International Symposium on Precision Approach and Automatic Landing*, Braunschweig, Germany, February 1995, 67-73.
19. "Standards Development for Category II/III Precision Approach and Landing Using Differential GNSS; RTCA Activities and Status" (with K.D. McDonald), *Proceedings of the 51st Annual Meeting of the Institute of Navigation*, Colorado Springs, June 1995, 361-367.
20. "Electronic Data Distribution Service: Rationale and Benefits", *Workshop on Electronic Document Distribution*,

Newport Beach, California, February 27-28, 1996.

NOTES:

1. THE ABOVE DOES NOT INCLUDE TWO PUBLISHED Institute of Navigation (ION) ABSTRACTS AS FOLLOWS:

"A Status Report on the Development of Minimum Aviation System Performance Standards (MASPS) for a GNSS-based Special Category I (SCAT-I) Precision Approach System", (with K.D. McDonald), *Proceedings of the 1993 National Technical Meeting of the Institute of Navigation*, San Francisco, California, January 20-22, 1993, p.425 (Abstract Only).

"The RTCA Special Category I Differential GPS Instrument Approach System Standards and Future Development of DGNSS-aided Category II and III Precision Approach Standards" (with Keith D. McDonald), *Proceedings of the ION GPS-93 Meeting*, Salt Lake City, Utah, September 22-24, 1993, p.851 (Abstract Only).

2. THE ABOVE LIST ALSO DOES NOT INCLUDE A NUMBER OF RTCA AND International Civil Aviation Organization (ICAO) WORKING AND INFORMATION PAPERS, E.G.:

Additionally, Dr. Ligler has drafted numerous working papers for ICAO and RTCA meetings. Exemplary working papers include:

ICAO Aeronautical Mobile Communications Panel (AMCP) Working Group C, October 2002

Requirements and Desirable Features for the Universal Access Transceiver (UAT) System

ICAO AMCP Working Group of the Whole, May 2002

1. Status of Universal Access Transceiver (UAT) MOPS
2. Candidate ADS-B Radio Frequency Links: Findings of the Technical Link Assessment Team (TLAT) and Post TLAT Developments

RTCA Global Navigation Satellite System (GNSS) Task Force (in addition to Task Force editorial committee and terminal area (technical) drafting group assignments)

1. GNSS Accuracy, Availability, and Integrity (Washington, July 9-10, 1992: Technical Working Group Meeting).
3. Communications to Support Applications of GNSS in the Terminal Area (Dallas-Fort Worth, April 27-28, 1992: Terminal Area Subgroup Meeting).

February 1992 London Meeting of the ICAO FANS GNSS Technical Subgroup:

1. Differential GNSS (co-authored)
2. Costs of a Worldwide GNSS Integrity Monitoring Network (co-authored by Aeronautical Radio, Inc. and France)
3. GNSS Definitions (co-authored with U.S., IATA, and French delegations).

December 1991 Montreal Meeting of the ICAO World Area Forecast System Study Group:

Automated Aircraft Meteorological Reports: 1995 projections (co-authored).

1990 ICAO Communications/Meteorology/Operations Division Meeting

{Upper Air Forecast Grid Paper}

Tab D

LIST OF MATERIALS CITED AND/OR REVIEWED
Declaration of Dr. George T. Ligler

1. The 1981 specification (i.e., the specification of Application No. 06/317,510 filed November 3, 1981), as contained in U.S. Patent No. 4,694,490.
2. The 1987 specification (i.e., the specification of Application No. 07/096,096 filed September 11, 1987).
3. The Office Action dated 7/30/02 from Application No. 08/487,526, Sections I-VI.
4. Amended Claims which I understand will be submitted with Applicant's Response to the Office Action at #3 above (Tab A to this Declaration).
5. The amended claims filed in applicants' 2/04/02 Amendment/Response in Application No. 08/487,526 (matter number 52090.000355, "MULT").
6. Applicants' support chart submitted to the PTO identifying written description support for the then pending claims in Application No. 08/487,526 (i.e., Appendix C to applicants' 2/04/02 Amendment/Response filed in Application No. 08/487,526).
7. P. 436 from Initial Determinations (Public Version), addressing the level of ordinary skill and expertise in the art, in *In re Certain Digital Satellite Sys. (DSS) Receivers & Components Thereof*, No. 337-TA-392 1997 WL 696255 (Int'l Trade Comm. Oct. 20, 1997).
8. M.P.E.P. §§ 201.11 and 2163 (2163.01-2163.07), 8th Edition (2001).
9. 35 U.S.C. 112, Section 1 and 35 U.S.C. 120.
10. *Prevue Interactive and United Video Satellite v. Starsight Telecast*, N.D. Oklahoma, Civil Action No. 93-CV-934-H: Excerpts from Trial Transcript (Tab E to this Declaration).

Tab E

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OKLAHOMA

3 PREVUE INTERACTIVE, INC., a Delaware)
4 corporation,)

5 and)

6 UNITED VIDEO SATELLITE GROUP, INC.,)
7 a Delaware corporation,)

8 Plaintiffs,)

9 V.)

No. 93-C-934-H

10 STARSIGHT TELECAST, Inc., a)
11 California corporation,)

12 Defendant.)

13 STARSIGHT TELECAST, Inc., a)
14 California corporation,)

15 Counterclaimant,)

16 V.)

17 UNITED VIDEO SATELLITE GROUP, INC.,)
18 a Delaware corporation,)

19 PREVUE INTERACTIVE, INC., a Delaware)
20 corporation,)

21 and)

22 PREVUE NETWORKS, INC., a Delaware)
23 corporation,)

24 Counterdefendants.)

25 REPORTER'S TRANSCRIPT OF PROCEEDINGS
 HAD ON MAY 15, 1996
 NONJURY TRIAL - VOLUME V

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

1 APPEARANCES:

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 3 and Counterdefendants: Norman & Wohlgemuth
 4 2900 Mid-Continent Tower
 5 Tulsa, Oklahoma 74103

6 Mr. Robert C. Morgan
 7 Mr. Laurence S. Rogers
 8 Mr. Joseph M. Guiliano
 9 Ms. Elaine A. Drager
 10 Fish & Neave
 11 1251 Avenue of the Americas
 12 New York, New York 10020-1104

13 For the Defendant Mr. Fred Rahal, Jr.
 14 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 15 Orbison & Lewis
 16 Frisco Building
 17 502 West Sixth Street
 18 Tulsa, Oklahoma 74119-1010

19 Mr. A. James Isbester
 20 Mr. William L. Anthony
 21 Ms. Susan M. Spaeth
 22 Mr. K. T. Sunny Cherian
 23 Townsend and Townsend and Crew
 24 Steuart Street Tower
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Mr. William L. Anthony, Jr.
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Mr. John W. Girvin, Jr.
 Cooley, Godward, Castro,
 Huddleston & Tatum
 Five Palo Alto Square
 4th Floor
 Palo Alto, California 94306-2155

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1 Go ahead, Mr. Rogers. Thank you.

2 Q. (By Mr. Rogers) Dr. Ligler, with respect to the level of
3 ordinary skill in the art, you testified your opinion is based
4 upon obviousness and view to a person of ordinary skill in the
5 art. In your opinion what was the level of ordinary skill in
6 the art of electronic computer program guides and computer
7 systems in 1985? Who was a person, in your opinion, of
8 ordinary skill in the art?

9 A. A person of ordinary skill in the art in that time frame
10 would be a skilled individual in the computer arts and in
11 television and/or cable systems, cable television systems.
12 This individual might be degreed, might have extended
13 experience after a high school education, perhaps a high school
14 education plus a few years of college, but they would be
15 skilled.

16 Q. And what's the basis of your holding this opinion? What
17 are you looking to that forms your opinion?

18 A. Well, I reviewed the -- I heard the testimony of Mr.
19 Kerklo. I certainly have had an opportunity to assess Messrs.
20 Clupper and Axford, and I think we've heard a good bit about
21 Mr. Young's qualifications as well.

22 Q. All right. Let's talk about invalidity now in light of
23 your opinion of obviousness. I would like to focus first on
24 claim 66, and I believe you have an exhibit, that's Exhibit
25 536.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

PREVUE INTERACTIVE, INC., a Delaware
corporation,

and

UNITED VIDEO SATELLITE GROUP, INC.,
a Delaware corporation,

Plaintiffs,

V.

STARSIGHT TELECAST, Inc., a
California corporation,

Defendant.

STARSIGHT TELECAST, Inc., a
California corporation,

Counterclaimant,

V.

UNITED VIDEO SATELLITE GROUP, INC.,
a Delaware corporation,

PREVUE INTERACTIVE, INC., a Delaware
corporation,

and

PREVUE NETWORKS, INC., a Delaware
corporation,

Counterdefendants.

No. 93-C-934-H

REPORTER'S TRANSCRIPT OF PROCEEDINGS
HAD ON MAY 8, 1996
NONJURY TRIAL - VOLUME I

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

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8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
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19 Mr. John W. Girvin, Jr.
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 21 4th Floor
 Palo Alto, California 94306-2155

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25

1 MR. ROGERS: Your Honor, Larry Rogers. Plaintiffs
2 call Mr. Charles Clupper to the stand.

3 Your Honor, we have a book of exhibits that we expect
4 to be using with this witness. May I have my associate
5 approach the bench and the witness to deliver that book?

6 THE COURT: All right. I say so with trepidation.

7 CHARLES CLUPPER

8 Called as a witness on behalf of the plaintiffs, being first
9 duly sworn, testified as follows:.

10 DIRECT EXAMINATION

11 BY MR. ROGERS:

12 Q. Good morning.

13 A. Good morning.

14 Q. Would you please state your name for the record?

15 A. Charles Clupper.

16 Q. And what is your current residence address?

17 A. Current residence is El Dorado Hills, California.

18 Q. And by whom are you presently employed?

19 A. International Billing Services.

20 Q. Are they a subsidiary of any company or a division?

21 A. Yes, we are a wholly-owned subsidiary of U.S. Computer
22 Services.

23 Q. And your present employment is also in California?

24 A. Correct.

25 Q. And what is your present title at International Billing

1 Services?

2 A. Vice President of Engineering Systems.

3 Q. And your responsibilities in that capacity?

4 A. My responsibilities include overseeing maintenance,
5 facilities design and various other engineering types of design
6 at that company.

7 Q. How long have you been with International Billing Services
8 or another arm of U.S. Computer Services?

9 A. Almost 18 years.

10 Q. And what is the nature of -- give the Court a brief
11 overview of the nature of the business of your organization.

12 A. The nature of the business of International Billing
13 Services or U.S. Computer Services?

14 Q. Why don't we start at the top with U.S. Computer Services?

15 A. U.S. Computer Services is in the -- on the CableData
16 side, which is also a wholly-owned subsidiary, it provides
17 services and software to the cable television and telephony
18 industries, and the International Billing Services subsidiary
19 is in the business of providing statements a lot of which are
20 billing statements to cable television, telecommunications,
21 financial and other industries.

22 Q. Would you please relate briefly for the Court what your
23 positions and experiences have been with U.S. Computer
24 Services, an affiliated division, over the 17 years you have
25 been with the company eye-level?

1 A. Sure. I was, first, engineer with the company in 1978,
2 and from there moved to positions in various engineering
3 disciplines and then into engineering management with U.S.
4 Computer Services which did business as CableData at that time.

5 Q. What time period are you talking about now?

6 A. That time period starts in 1978 and continues until 1990
7 when I moved to International Billing Service.

8 Q. You were involved in engineering activities in connection
9 with the design of products in the early days?

10 A. Yes, I was.

11 Q. Are you appearing here today voluntarily?

12 A. Yes, I am.

13 Q. At whose request?

14 A. I was subpoenaed for the --

15 Q. For the deposition?

16 A. Yes, I was.

17 Q. You are appearing here today voluntarily at the request of
18 the plaintiffs in this case?

19 A. Yes, I am.

20 Q. Beyond having your direct expenses being paid for, are you
21 in any way being compensated in the nature of a consulting fee
22 or otherwise for your appearance here today?

23 A. No, I am not.

24 Q. Do you or to your knowledge do you know that U.S. Computer
25 Services or any company division of that organization has any

1 financial or other interest whatsoever in the outcome of this
2 litigation?

3 A. Not to the best of my knowledge, no.

4 Q. Do you own any stock in any of the parties to this
5 litigation?

6 A. No, I do not.

7 Q. Is U.S. Computer Services affiliated in a corporate sense
8 in any way with the parties to this litigation?

9 A. No, I'm not, or they are not.

10 Q. And is U.S. Computer Services involved in any way with
11 providing services or goods to any of the parties to this
12 litigation to your knowledge?

13 A. Not to the best of my knowledge, no.

14 Q. Is U.S. Computer Services or any part of that organization
15 involved in providing television schedule data or interactive
16 television program guide services?

17 A. No.

18 Q. All right. Would you please describe your educational
19 background since high school?

20 A. Yes. I studied engineering, had a couple of years of
21 engineering classes and then went into the industry and never
22 completed my degree.

23 Q. Did you attend any college?

24 A. Several along the way, yes.

25 Q. Okay. And what did you study in college?

1 A. Electrical engineering and some mechanical engineering
2 also.
3 Q. And did you join the military at some point?
4 A. Yes.
5 Q. And when was that?
6 A. I joined the Air Force in 1966.
7 Q. And in connection with that did you work in electronics?
8 A. Yes, I did.
9 Q. Would you please describe for the Court the nature of your
10 electronics hands-on education as it were and work experience
11 starting from your time in the military on up through when you
12 joined U.S. Computer Services?
13 A. Yes. The experience in the military, education in the
14 military, was general electronics background including radar
15 and photo-imaging and computer systems. Then I was -- when I
16 was stationed in Germany I actually worked on mapping radars
17 and other types of computer systems and electronically-
18 controlled photo-mapping devices.
19 Q. Were you involved in the design of electronic componentry,
20 the circuits themselves, transistors and things of that nature?
21 A. Not in the military, no.
22 Q. Okay. After the military, I presume that ended at some
23 point in time --
24 A. Yes.
25 Q. -- and you entered industry. Could you describe for the

1 Court where you began, and continue on up to the time you

2 joined U.S. Computer Services?

3 A. Surely. I started working for a company called Voice of
4 Music, which is now defunct. There I was an engineering
5 technician responsible for designing circuits and that type of
6 thing for the stereo component industry.

7 Q. And what year was that if you recall?

8 A. That was 1970.

9 Q. Okay. Then what?

10 A. After Voice of Music I went to work for Honeywell
11 Information Systems who provided equipment and services mainly
12 in the mainframe computer area, and I worked for them until
13 1978 under several capacities, some of them being in
14 maintenance, some of those being in management, and I also did
15 some design for them.

16 Q. And then in '78 you joined U.S. Computer Services;
17 correct?

18 A. That's correct.

19 Q. You continued working in an engineering capacity there?

20 A. Correct.

21 Q. Do you have any patents issued in your name?

22 A. Yes, I do.

23 Q. How many?

24 A. Four.

25 Q. In front of you in the exhibit book if you will turn,

1 please, to Exhibits 285 and 286 there are a couple of patents
2 there. I would like you to identify those as being yours if in
3 fact they are?

4 A. The one marked Exhibit 285 is mine, and the one marked
5 Exhibit 286 is also mine.

6 Q. All right. Certainly without going into these, generally
7 what do these relate to?

8 A. They both relate to either a descrambling apparatus that
9 was designed for the cable television set-top converter market
10 and a data transmission method designed for the same market.

11 Q. Did these patents have anything to do with the system that
12 I've been calling a CableData system, which was a system in the
13 nature of an interactive addressable cable television set-top
14 box?

15 A. Yes, they did.

16 Q. Could you please describe for the Court what role you
17 played in connection with that system, CableData system, that
18 these patents relate to?

19 A. My role was to architect the hardware system that was
20 present in the home, in other words the set-top converter, and
21 also what's typically called the headend computer that actually
22 transmitted the data to that set-top converter.

23 Q. The CableData system was something that was developed by
24 U.S. Computing Services?

25 A. Yes, it was.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

PREVUE INTERACTIVE, INC., a Delaware corporation,

and

UNITED VIDEO SATELLITE GROUP, INC.,
a Delaware corporation,

Plaintiffs,

v.

No. 93-C-934-H

STARSIGHT TELECAST, Inc., a
California corporation,

Defendant.

STARSIGHT TELECAST, Inc., a
California corporation,

Counterclaimant,

v.

UNITED VIDEO SATELLITE GROUP, INC.,
a Delaware corporation;

PREVUE INTERACTIVE, INC., a Delaware corporation,

and

PREVUE NETWORKS, INC., a Delaware corporation,

Counterdefendants.

REPORTER'S TRANSCRIPT OF PROCEEDINGS
HAD ON MAY 9, 1996
NONJURY TRIAL - VOLUME II

BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

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 5 Mr. Robert C. Morgan
 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
 6 Ms. Elaine A. Drager
 Fish & Neave
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8 For the Defendant Mr. Fred Rahal, Jr.
 9 and Counterclaimant: Riggs, Abney, Neal, Turpen,
 Orbison & Lewis
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 502 West Sixth Street
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12 Mr. A. James Isbester
 Mr. William L. Anthony
 13 Ms. Susan M. Spaeth
 Mr. K. T. "Sunny" Cherian
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16 Mr. William L. Anthony, Jr.
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19 Mr. John W. Girvin, Jr.
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 Huddleston & Tatum
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 4th Floor
 22 Palo Alto, California 94306-2155

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1 little bit more time next week, but I do prefer to move them in
2 all together. One additional point is simply that I find that
3 counsel for the other side is always more cooperative when they
4 still have exhibits of their own to be moved in. It's a
5 practice that has served well, so I don't see any reason to
6 change it now.

7 All right and this is the 583?

8 MR. ROGERS: Right. That is the small copy of the
9 large chart of the complicated circuit diagram.

10 THE COURT: All right.

11 MR. ROGERS: And then lastly, may Mr. Clupper be
12 excused from attendance at the trial at this point?

13 THE COURT: Any objection, Mr. Anthony?

14 MR. ANTHONY: No objection, Your Honor.

15 THE COURT: All right. He may be excused.

16 MR. ROGERS: Thank you, Your Honor. May I proceed?

17 THE COURT: Yes. Go ahead.

18 Q. (By Mr. Rogers) Good morning, Mr. Axford. Would you
19 state your full name for the record, please?

20 A. Michael Floyd Axford.

21 Q. And your current residence address and your current
22 employment, please?

23 A. It's Rancho Cordova. I work for CableData.

24 Q. What is the relationship between CableData and the company
25 for whom Mr. Clupper works, International Billing Services?

1 A. Both companies are wholly-owned subsidiaries of U.S.

2 Computer Services.

3 Q. And your current title at CableData?

4 A. Manager, system architecture.

5 Q. Is Mr. Clupper your supervisor today in any respect?

6 A. In no way.

7 Q. What are your current responsibilities at CableData?

8 A. My responsibilities are to investigate new technologies

9 and determine how to apply them to the products that we're

10 building, and to infuse those technologies into the teams that

11 are building the products.

12 Q. And what sort of products are we talking about, what sort
13 of technologies?

14 A. They're primarily software products for subscriber

15 management and billing within the cable and telephone

16 industries.

17 Q. Would you please describe for the Court your educational
18 and professional background?

19 A. I have a high school education, very much self-driven,

20 self-learner, and as far as professional experience, my first

21 real technical position was with the Watch Tower Society doing

22 maintenance on elevators and other bindery equipment and

23 finally doing computer maintenance for them and designed small

24 circuits.

25 Q. What years was that?

1 A. That was in '77 to '81.

2 Q. Okay.

3 A. And then from there I came back to California and worked
4 for Gene Medical Systems in a digital fluoroscopy system
5 primarily testing large print and circuit boards that process
6 digital video, as well as I wrote some software for them for
7 testing purposes.

8 Q. That was 1981?

9 A. That was '81 into '82.

10 Q. Okay.

11 A. And then I joined CableData in July of '82.

12 Q. And in what capacity did you join CableData?

13 A. I was hired as an electronic technician and worked as such
14 for about six months and was promoted to an engineer.

15 Q. And have you been with CableData ever since?

16 A. No. I left the company for a couple of years in 1986 to
17 go back to New Jersey with some friends in a small business
18 where we designed bit slice engines for high speed letter
19 graphics as well as bit slice software primarily in the
20 printing industry.

21 Q. What do you mean by bit slice?

22 A. Bit slice, to get very high performance, separates the
23 components of traditional microprocessor into separate pieces
24 and uses very wide instruction orders as for the normal 8, 16,
25 32 bit systems we see today.

1 Q. Did you return at some point in time, I take it, to
2 CableData?

3 A. Yes, I did, 1988.

4 Q. In what capacity?

5 A. As a hardware/software engineer.

6 Q. Did you remain in that capacity until the present time?

7 A. Yes, although my focus has clearly shifted to the software
8 over the last five years.

9 Q. Have you received any professional honors over the course
10 of your career?

11 A. Within the company I have received a number of different
12 certificates and awards, but 1992 I received Fellowship of the
13 Flame award, which is our company's highest award for lifelong
14 career achievement and recognition of expertise in my field.

15 Q. And what is the field in which your expertise was
16 recognized?

17 A. It would be computer technology both hardware and
18 software.

19 Q. Have you published in the field of computer technology
20 hardware and software?

21 A. I have published in several journals, Computer Language,
22 International Tandem Users Journal as well as I've written a
23 large number of tutorial and instructive articles in in-house
24 publications.

25 Q. Do you have any financial interest in the outcome of this

3 PREVUE INTERACTIVE, INC., a Delaware
corporation,
4
and
5
UNITED VIDEO SATELLITE GROUP, INC.,
6 a Delaware corporation,
7
Plaintiffs,
8
V.
9
STARSIGHT TELECAST, Inc., a
California corporation,
10
Defendant.
11
12 STARSIGHT TELECAST, Inc., a
California corporation,
13
Counterclaimant,
14
V.
15
UNITED VIDEO SATELLITE GROUP, INC.,
16 a Delaware corporation,
17
PREVUE INTERACTIVE, INC., a Delaware
corporation,
18
and
19
PREVUE NETWORKS, INC., a Delaware
corporation,
20
Counterdefendants.
21

REPORTER'S TRANSCRIPT OF PROCEEDINGS
HAD ON MAY 13, 1996
NONJURY TRIAL - VOLUME III

25 BEFORE THE HONORABLE SVEN ERIK HOLMES, Judge

Glen R. Dorrough
UNITED STATES COURT REPORTER

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 5 Mr. Laurence S. Rogers
 Mr. Joseph M. Guiliano
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 22 Palo Alto, California 94306-2155

23 - - - - -

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1 MR. MORGAN: Prevue calls Mr. John Kerklo.

2 THE COURT: All right Mr. Kerklo, please come forward
3 and be sworn.

4 JOHN KERKLO

5 Called as a witness on behalf of the plaintiffs, being first
6 duly sworn, testified as follows:

7 MR. ROGERS: Your Honor, may I approach the
8 equipment and try to lower the volume in case we have to use it
9 again?

10 THE COURT: All right, go ahead.

11 MR. MORGAN: I'm sorry, did the Court get a set of
12 exhibits? Let me hand these up to you. And may I approach the
13 witness, Your Honor?

14 THE COURT: Yes, go ahead.

15 MR. MORGAN: Let me hand you this one. This is Mr.
16 Marshall's.

17 THE COURT: Go ahead, please.

18 MR. MORGAN: Thank you, Your Honor

19 DIRECT EXAMINATION

20 BY MR. MORGAN:

21 Q. What is your name?

22 A. My name is John Kerklo.

23 Q. What is your employment?

24 A. I am a partner in Media Management Services, Incorporated.

25 Q. What is the business of Media Management Services,

1 Incorporated?

2 A. We are consultants to the media and telecommunications
3 industries, particularly the cable television industry.

4 Q. Have you been retained as an expert on behalf of Prevue in
5 this action?

6 A. I have.

7 Q. Is that at your normal consulting rate?

8 A. Yes.

9 Q. When did you graduate high school, Mr. Kerklo?

10 A. In 1962.

11 Q. Mr. Kerklo you might want to move a little bit closer to
12 the microphone so we can hear you more clearly. Did you have
13 any particular interests in high school?

14 A. Among my interest were computers.

15 Q. There weren't a whole lot of computers available were
16 there?

17 A. In actuality I had never seen one.

18 Q. So what did you do with your interest in computers?

19 A. One of my science projects for high school was something I
20 called a computer.

21 Q. What did you do?

22 A. I implemented a binary adder using pinball machinery
23 relays.

24 Q. That's what you had available to you as a high school
25 student?

- 1 A. Yes.
- 2 Q. Did you go to college?
- 3 A. I did.
- 4 Q. Where and when, please?
- 5 A. I went to Pennsylvania State University from 1962 to 1965
6 and Ohio University from 1965 to 1970.
- 7 Q. What was your focus at Penn State?
- 8 A. I entered as an electrical engineer and I continued that
9 curricula but during my studies I discovered the computations
10 center. And my focus became the computation center.
- 11 Q. That's where the computers were at Penn State?
- 12 A. Indeed.
- 13 Q. Did you work while you were at Penn State?
- 14 A. Starting in 1963 I worked part-time for researchers at
15 Penn State who were -- who needed computer programming
16 assistance. Among --
- 17 Q. I'm sorry, go ahead?
- 18 A. Among them was the Ionospheric Research Laboratory.
- 19 Q. Why did you switch to Ohio University in 1965?
- 20 A. My mentor at Penn State, Dr. George Gorsline accepted a
21 position at Ohio University as their director of their computer
22 center. And he took me along as senior systems programmer.
- 23 Q. And you were at what level college then?
- 24 A. Approximately a junior.
- 25 Q. Now as a senior systems programmer at Ohio State, what

1 were your responsibilities?

2 A. That was Ohio University.

3 Q. I'm sorry, Ohio University. The football guys would be
4 unhappy with me.

5 A. The first responsibility was to choose a mainframe
6 computer facility for the university. And then to choose and
7 adapt operating systems for that computer and later to develop
8 an operating system that was specific to the university's
9 needs.

10 Q. What happened to your studies when you took your job at
11 Ohio University?

12 A. I shifted from a full-time student and part-time
13 employment to full-time employment and part-time student.

14 Q. Now while you were at Ohio University, did you teach any
15 classes?

16 A. Yes, I did.

17 Q. How did that come about, you weren't a professor, I
18 assume?

19 A. No, I was staff.

20 Q. Okay. How did it come about that you taught some classes?

21 A. The university at that time was teaching some basic
22 computer skill classes and wanted to expand their program.
23 Being a state university they had difficulty in a sort of a
24 chicken-and-egg thing there. So they drafted the computer
25 center staff to help them get started with some of those, --

1 those courses.

2 Q. You were one of those people?

3 A. I was one of those.

4 Q. Do you ever finally get your degree or piece of paper out
5 of Ohio?

6 A. I did not.

7 Q. What did you do instead?

8 A. I founded a company called Comp-Acct, Incorporated.

9 Q. That's not the Compact Computer Company, is it?

10 A. No, this was C-O-M-P hyphen A-C-C-T, or Computer
11 Accountings.

12 Q. Now you left the university for that in 1970?

13 A. I did.

14 Q. What was the business of Comp-Acct?

15 A. Comp-Acct conceived, and developed, and took to market the
16 first computerized point-of-sale cash register system. We sold
17 them to places like McDonald's.

18 Q. What did that system do?

19 A. It was not only a cash register function but a complete
20 accounting system for a fast food restaurant. It would do all
21 of the computations for inventory and payroll. And it would
22 project payroll and produce similar reports for store
23 management.

24 Q. What happened to Comp-Acct?

25 A. It was sold to General Telephone and Electronics in 1974.

1 Q. What did you do then?

2 A. I continued with what became GTE Comp-Acct.

3 Q. What areas did you work on there?

4 A. There I continued with the cash register development but
5 also expanded my role as a development engineer and a manager
6 of development engineers to other areas for GTE among those
7 included investigation of Teletext in about the 1977 time
8 frame.

9 Q. And after '77 what did you do?

10 A. The investigation for Teletext introduced me to the cable
11 television industry in that context as a possible delivery
12 mechanism for Teletext. I was interested in it. GTE had a
13 manufacturer of cable television equipment as a division and I
14 worked with them a bit and then later accepted a position with
15 GTE Sylvania C-A-T-V, in El Paso, Texas.

16 Q. At the cable TV system there?

17 A. Yes, excuse me -- it's a vendor for equipment.

18 Q. I'm sorry. It sells equipment for cable systems?

19 A. Yes.

20 Q. Now were you the only member of the engineering staff at
21 GTE Sylvania with computer skills?

22 A. I joined them in 1980. When I got there there were
23 already a number of engineers that were using microprocessors
24 to develop converter products and addressable converter
25 products and remote controls. I was not the only one when I

1 got there.

2 Q. Now when you talk about converter products, what is a
3 converter?

4 A. To cable television people a converter is the special
5 tuner that it provides in some cable systems and some
6 subscribers to tune the channels that are carried on the
7 cable. In other destinations the converter might also include
8 a descrambling function which is used to decode secure
9 channels.

10 Q. That's part of a set-top box?

11 A. Set-top box is a fairly recent term for that same thing.

12 Q. When did you leave GTE?

13 A. I left GTE in 1982, joining American Television and
14 Communications in early 1983.

15 Q. What was ATC's business at that time?

16 A. In 1983, ATC was a large cable television multiple system
17 operator.

18 Q. What was your position, please?

19 A. Director of Research and Development.

20 Q. By about the 1985 time period, how many people were on
21 your staff?

22 A. I had 12 research professionals and a few technicians.

23 Q. What technical backgrounds did these people have?

24 A. They were all in the computer field, hardware,
25 development, software development or both.

Tab F

Supplemental Support Chart
For Amended Claims of Application 08/487, 526

Claim (Tab A)	Exemplary Citations to 1981 Specification	Exemplary Citations to 1987 Specification
3	col. 19, ll. 35-41	p. 449, ll. 13-20 and ll. 26-35
4	col. 19, ll. 20-23	p. 436, l. 23 to p. 437 l. 3 in view of p. 450, ll. 7-25
5	col. 19, ll. 20-23 and ll. 35-37	p. 449, ll. 13-20; p. 450, ll. 7-25
6	col. 19, ll. 5-8 in view of col. 10, ll. 15-28;	p. 450, ll. 7-25
7	col. 19, ll. 59-60; col. 19, l. 67 to col. 20, l. 1	p. 25, ll. 33-34; p. 26, ll. 8-11
8	see support for claim 7	see support for claim 7
9	col. 19, ll. 20-29	p. 445, l. 24 to p. 446, l. 1 in view of p. 450 ll. 7-25
10	see support for claim 7	see support for claim 7
11	col. 19, ll. 35-37; Fig. 6C	p. 449, ll. 13-20; Fig. 7C
12	see support for claim 11	see support for claim 11
13	col. 19, ll. 20-23	p. 249, ll. 25-33 and p. 252, l. 31 - p. 253, l. 2 in view of p. 435, ll. 23 -p. 436, l. 1
14	col. 19, ll. 12-23	p. 249, ll. 25-33 and p. 252, l. 31 - p. 253, l. 2 in view of p. 435, ll. 23 -p. 436, l. 1
15	see support for claim 7	see support for claim 7
16	see support for claim 10	see support for claim 10
17	col. 19, ll. 23-27	p. 445, ll. 23-29; p. 446, ll. 17-23
18	col. 19, ll. 53-56; col. 19, ll. 35-41; Fig. 6C	p. 25, ll. 26-31; p. 449, ll. 13-26 in view of p. 421, ll. 18-22; Fig. 7C
21	col. 19, ll. 53-56	p. 25, ll. 26-31
22	col. 19, ll. 35-41	p. 449, ll. 13-26 in view of p. 421, ll. 18-22
23	see support for claim 18	see support for claim 18
25	col. 20, ll. 47-50; Fig. 6C (221)	p. 475, ll. 1-2; Fig. 7C (221)
27	col. 19, ll. 48-51; col. 19, l. 64 to col. 20, l. 2	p. 24, l. 22 - p. 25, l. 6
28	col. 19, ll. 20-27	p. 445, ll. 23-29; p. 446, ll. 17-23
30	see support for claims 5 and 13	see support for claims 5 and 13
34	col. 20, ll. 55-59	p. 472, ll. 23-27 in view of p. 32, ll. 16-20; p. 50, ll. 14-17; p. 271, l. 33 to p. 272, l. 1; and p. 272, l. 26 to p. 273, l. 3

Supplemental Support Chart
For Amended Claims of Application 08/487, 526

Claim (Tab A)	Exemplary Citations to 1981 Specification	Exemplary Citations to 1987 Specification
35	see support for claim 25	see support for claim 25
36	see support for claim 34	see support for claim 34
37	Claim 37 is an apparatus claim that is generally analogous to method claim 2. Claim 37 is supported by e.g., Fig. 1 (20, 22); Fig. 6C (200, 201/222, 205, 202) and the support provided for claim 2.	Claim 37 is supported by e.g., Fig. 2 (20, 22); Fig. 7C (200, 201/222, 205, 202M) and the support provided for claim 2.
38	see support for claim 13; col. 6, ll. 54-61; Fig. 2A	see support for claim 13; p. 35, ll. 4-16; Fig. 2A
39	see support for claim 18; col. 19, ll. 24-25	see support for claim 18; p. 435, ll. 9-15
40	col. 19, ll. 24-25; Fig. 6C (214)	p. 295, ll. 6-8; p. 439, ll. 6-15; Fig. 7C (214)
41	see support for claim 17; Fig. 6C (217)	see support for claim 17; Fig. 7C (217)
42	see support for claim 41; Fig. 6C (220)	see support for claim 41; Fig. 7C (220)
67	see support for claim 10	see support for claim 10
68	see support for claim 12	see support for claim 12
69	see support for claim 18	see support for claim 18
70	Claim 70 is an apparatus claim that is generally analogous to method claim 20. Claim 70 is supported by e.g., Fig. 6C (200, 201, 205, 202) and the support provided for claim 20.	Claim 70 is supported by e.g., Fig. 7C (200, 201, 205, 202M) and the support provided for claim 20.
71	see support for claim 21	see support for claim 21
72	see support for claim 22; Fig. 6C (222)	see support for claim 22; Fig. 7C (222)
73	see support for claim 23	see support for claim 23
74	Claim 74 is an apparatus claim that is generally analogous to method claim 24. Claim 74 is supported by e.g., Fig. 1 (22); Fig. 6D (200, 201, 222, 205, 225) and the support provided for claim 24.	Claim 74 is supported by e.g., Fig. 2 (22); Fig. 7F (200, 201, 222, 205, 225) and the support provided for claim 24.
75	see support for claim 25	see support for claim 25
76	Claim 76 is an apparatus claim that is analogous in many respects to method claim 26. Claim 76 is supported by e.g., Fig. 1 (22); Fig. 6C (200, 201, 222, 205, 202) and the support provided for claim 26.	Claim 76 is supported by e.g., Fig. 2 (22); Fig. 7C (200, 201, 222, 205, 202M) and the support provided for claim 26.
77	see support for claim 27	see support for claim 27

Supplemental Support Chart
For Amended Claims of Application 08/487, 526

Claim (Tab A)	Exemplary Citations to 1981 Specification	Exemplary Citations to 1987 Specification
78	see support for claim 23	see support for claim 23
79	see support for claim 82	see support for claim 82
80	see support for claim 83	see support for claim 83
81	see support for claim 84	see support for claim 84
82	see support for claim 21	see support for claim 21
83	see support for claim 22	see support for claim 22
84	see support for claim 18	see support for claim 18
85	Claim 85 is an apparatus claim that is generally analogous to method claim 29. Claim 85 is supported by e.g., Fig. 6C (205, 201, 202M) and the support provided for claim 29.	Claim 85 is supported by e.g., Fig. 7C (e.g., 205, 201, 202M) and the support provided for claim 29.
86	see support for claim 30; Fig. 6C (200)	see support for claim 30; Fig. 7C (200)
87	see support for claim 91	see support for claim 91
88	see support for claim 92; Fig. 1 (22); Fig. 6C (222)	see support for claim 92; Fig. 2 (22); Fig. 7C (222)
89	see support for claim 93; Fig. 6C (222)	see support for claim 93; Fig. 7C (222)
90	see support for claim 94	see support for claim 94
91	see support for claim 21	see support for claim 21
92	col. 19, ll. 48-51; col. 19, l. 64 to col. 20, l. 2	p. 24, ll. 22-32; p. 451, ll. 6-11
93	see support for claim 22	see support for claim 22
94	see support for claim 18	see support for claim 18
95	Claim 95 is an apparatus claim that is generally analogous to method claim 33. Claim 95 is supported by e.g., Fig. 6D (201, 202, 222, 221, 205, 225, 223) and the support provided for claim 33.	Claim 95 is supported by e.g., Fig. 7F (201, 202M, 222, 221, 205, 225, 223) and the support provided for claim 33.
96	see support for claim 34	see support for claim 34
97	see support for claim 36	see support for claim 36
98	see support for claim 35	see support for claim 35
99	see support for claim 101	see support for claim 101
100	see support for claim 102	see support for claim 102
101	col. 20, ll. 16-24	p. 469, l. 35 to p. 470, l. 3, p. 471, ll. 6-13
102	col. 20, ll. 32-38	p. 477, l. 8-23
103	see support for claim 102	see support for claim 102
104	see support for claim 103	see support for claim 103



RELATED PROCEEDINGS APPENDIX

1. *Personalized Mass Media Corp. v. The Weather Channel, Inc. et al.*, 899 F. Supp. 239 (E.D.Va. 1995).
2. May 16, 1997, Initial Determination Granting Motion for Summary Determination of Invalidity of Claim 35 of the '277 Patent in *Certain Digital Satellite System (DDS) Receivers and Components Thereof* before the United States International Trade Commission, Investigation No. 337-TA-392.
3. January 7, 1999, Decision in *Personalized Media Communications, LLC, v. Int'l Trade Comm., et al.*, (U.S. Ct. of Appeals for the Federal Circuit).
4. October 31, 1997, Initial and Recommended Determinations in *Certain Digital Satellite System (DDS) Receivers and Components Thereof* before the United States International Trade Commission, Investigation No. 337-TA-392.
5. December 4, 1997, Notice Of Final Commission Determination Of No Violation Of Section 337 Of The Tariff Act Of 1930, in *Certain Digital Satellite System (DDS) Receivers and Components Thereof* before the United States International Trade Commission, Investigation No. 337-TA-392.
6. November 24, 1998, Decision in *Personalized Media Communications, LLC, v. Int'l Trade Comm., et al.*, 61 F.3d 696, 48 U.S.P.Q.2d 1880.
7. May 13, 1999, Notice Of Commission Decision To Terminate The Investigation And To Vacate Portions Of The Initial Determination in *Certain Digital Satellite System (DDS) Receivers and Components Thereof* before the United States International Trade Commission, Investigation No. 337-TA-392.
8. Report And Recommendation of Special Master Regarding Claim Construction, *Pegasus v. DIRECTV*, C.A. 00-1020 (GMS), Dist. of Delaware (Judge Sleet).